```
<110> Kim, Jungsuh P.
      Starr, Douglas B.
      Tam, Albert W.
     Laurance, Megan E.
     Michelotti, Emil F.
     Velligan, Mark D.
     Latour, Derek R.
      Thomas, Rita L.
      Kongpachith, Ana
      Sheppard, Liana T.
      Lim, Moon Young
      Bruice, Thomas W.
<120> PROMOTERS FOR REGULATED GENE EXPRESSION
<130> 4600-0135.30
<140> Not Yet Assigned
<141> Filed Herewith
<150> US 60/209,549
<151> 2000-06-06
<160> 78
<170> FastSEQ for Windows Version 4.0
<210> 1
<211> 1903
<212> DNA
<213> Homo sapiens
<400> 1
                                                                        60
cagetgggee geeettgtge gegggetgat getetgagge ttggetatge gggggeeaae
                                                                       120
gcgattqtqq qtqctcqqqq aqtqqqqqqq qqcacqaccq taqqtqctcc ctqctqqggc
                                                                       180
aacccatcgc tccccatgcg gaatccgggg gtaattaccc ccccaggacc cggaatatta
                                                                       240
qtaatcctaa ttcccggcgg gggagggggc gcgggaggaa ttcaccctga aaggtggggg
                                                                       300
tqqqqqqqt cqcatcttqc tqtqaqcacc ctqqcqaaqq gqaqaqqqct ttttctatca
                                                                       360
gttttctttg agcttttact gttaagaggg tacggtggtt tgatgacact gaactatatt
                                                                       420
caaaaggaag taaatgaaca gttttcttaa tttggggcag gtactgtaaa aataaaaaca
                                                                       480
aaagttaaga cagtaaaatg toottttatt ttttaatgca ccaaagagac agaacctgta
                                                                       540
attttaaaaa ctgtgtattt taatttacat ctgcttaagt ttgcgataat attggggacc
ctctcatgta accacgaaca cctatcgatt ttgctaaaaa tcagatcagt acactcgttt
                                                                       600
gtttaattga taattgttet gaattatgee ggeteetgee ageeceetca egeteacgaa
                                                                       660
                                                                       720
ttcaqtccca qqqcaaattc taaaqqtqaa qqqacqtcta cacccccaac aaaaccaatt
aggaacttcg gtggtcttgt cccaggcaga ggggactaat atttccagca atttaatttc
                                                                       780
ttttttaatt aaaaaaatg agtcagaatg gagatcactg tttctcagct ttccattcag
                                                                       840
                                                                       900
aggtgtgttt ctcccggtta aattgccggc acgggaaggg agggggtgca gttggggacc
                                                                       960
cccgcaagga ccgactggtc aaggtaggaa ggcagcccga agagtctcca ggctagaagg
                                                                      1020
acaagatgaa ggaaatgetg gccaccatct tgggctgctg ctggaatttt cgggcattta
                                                                      1080
ttttatttta ttttttgagc gagcgcatgc taagctgaaa tccctttaac ttttagggtt
acccccttgg gcatttgcaa cgacgcccct gtgcgccgga atgaaacttg cacaggggtt
                                                                      1140
                                                                      1200
gtgtgcccgg tectecccgt cettgcatge taaattagtt ettgcaattt acacgtgtta
                                                                      1260
atgaaaatga aagaagatgc agtcgctgag attctttggc cgtctgtccg cccgtgggtg
                                                                      1320
ccctcgtggc gttcttggaa atgcgcccat tctgccggct tggatatggg gtgtcgccgc
                                                                      1380
gccccagtca ccccttctcg tggtctcccc aggctgcgtg ctgtgccggc cttcctagtt
gtcccctact gcagagccac ctccacctca ccccctaaat cccgggggac ccactcgagg
                                                                      1440
cggacggggc cccctgcacc cctcttccct ggcggggaga aaggctgcag cggggcgatt
                                                                      1500
```

```
1560
cagggatgge ttttgggete tgeceetege tgeteeegge gtttggegee egegeeeeet
                                                                  1620
coccetgage acquaecege acceptage attaceattet atgacggget ttgatetttg
                                                                  1680
cttaacaaca gtaacgtcac acggactaca ggggagtttt gttgaagttg caaagtcctg
                                                                  1740
                                                                  1800
gagectecag agggetgteg gegeagtage agegageage agagteegea egeteeggeg
aggggcagaa gagcgcgagg gagcgcgggg cagcagaagc gagagccgag cgcggaccca
                                                                  1860
gccaggaccc acagccctcc ccagctgccc aggaagagcc cca
                                                                  1903
<210> 2
<211> 32
<212> DNA
<213> Artificial Sequence
<220>
<223> primer
<400> 2
                                                                   32
gcacgcgtgc tagccagctg ggccgccctt gt
<210> 3
<211> 32
<212> DNA
<213> Artificial Sequence
<220>
<223> primer
<400> 3
                                                                    32
atccatggaa gctttggggc tcttcctggg ca
<210> 4
<211> 34
<212> DNA
<213> Artificial Sequence
<220>
<223> primer
<400> 4
gcacgcgtgc tagctggagc ctccagaggg ctgt
                                                                   34
<210> 5
<211> 10
<212> DNA
<213> Homo sapiens
<400> 5
gagttttgtt
                                                                   10
<210> 6
<211> 7
<212> DNA
<213> Homo sapiens
<400> 6
                                                                    7
gagtttt
<210> 7
<211> 16
<212> DNA
<213> Homo sapiens
```

```
<400> 7
cagtaacgtc acacgg
                                                                        16
<210> 8
<211> 10
<212> DNA
<213> Homo sapiens
<400> 8
                                                                        10
cctccagagg
<210> 9
<211> 2395
<212> DNA
<213> Homo sapiens
<400> 9
gaattcactg gggagagcat tcaggaagat gacaacagga taataggtca acagagtaat
                                                                        60
                                                                       120
agagaggtcg ctaaaaataa actctaagaa gtattcagcc aaaactatta ttgagctaat
aatggtggga tcaatttcag gggaatattg tgggcagaag tcagactgta ggaggctggg
                                                                       180
gatcaagaag ttgaggcaag gaggttggac aacaactgtt ttttcaagtt ggtcacgtga
                                                                       240
acaaatctgt gaccttcage ctcccctccc tcgggtcttg gctgagctga ttgcagggcc
                                                                       300
cctgcagctc tggcactctc aagttgtata aaactgacag tgcagaagtc cttgagccca
                                                                       360
ttttggctct catgataatt ttccttcagt qqaactaaqq ttacttgtct aaqaaccaaa
                                                                       420
gcctctgact tgactgatca aagttcatca cgtqcatcga agccacctac ttggcagatg
                                                                       480
tagtgaaaag ctacatagat ctgggcccag gacaggatgc tggggcgtgg gaggggaaga
                                                                       540
aagcaggtgc taactatata gatagcatgc ctatcagagc agtttttacg tttcctattt
                                                                       600
gtctctcaaa acaattttat aggaatcatc aaagcaattt tatcatggtt tctagaccag
                                                                       660
gtttggatgt gaggtaggga tttccacagc tgcttttagt ttgaaqgaaa tctgataaqa
                                                                       720
tgatgcaaaa gcccttcaga aatgtgtaat cctacacact tcagtgattc aattcattgt
                                                                       780
caaaacttaa ggtgttttta atattgttat tgttcatttg gtttttacca acatgtaagg
                                                                       840
agttggcaat tatttgttaa actcatgtct taggctaaat aaattccaaa aaattcagga
                                                                       900
tgagaattgt ttattgctta acgtgtgtca aatttcttcc atgcacatct ttattagatc
                                                                       960
ttcacagcaa cctacaggat aagcaagaca qgtqcaagtq cctcctttqg qtatqaqqaa
                                                                      1020
actgaggtct aaagagatga agtgatttgc ccaaggctca tagcaattta ttggtagagc
                                                                      1080
aaagactaga attotottaa otgoagoota ttttoootat totgaactgt tacatcagoa
                                                                      1140
tcaacaatta tctaatggat tggaacagtg tacacaggca gcttagctac gtcaagtcac
                                                                      1200
gatttttact ttaacttcaa ttccagagtc ttggcctgat ttccctcaag accctactta
                                                                      1260
tetttggett tggaaaattt attttettg cattatettt ceagetaaat tttatttaat
                                                                      1320
aaccatcage atgetttttt tgetttatge catgtagaet tgacetgaaa acctgeeagg
                                                                      1380
ctttcattga gtttagtgat taaagaagta aagttctgag aagcaattag ttgatgggac
                                                                      1440
accagtcata aaatcaatcc aaacttttgt tgacatgtgt ttctttctcc atataccagg
                                                                      1500
ttcccgcttc gtattagtaa gattgaaatt gaaataagtc tattgctggt ggatgaattt
                                                                      1560
gtcactttcc ttgaaactgg tgaacccaaa aagttagaca gtgataggaa aatactgcca
                                                                      1620
ttgtctgtta agaagtctat gacatttcaa ggcaagaatg aatatatgga agaagaaact
                                                                      1680
                                                                      1740
tgtttcttct ttacttacaa aaaggaaagc ctggaagtga atgatatggg tataattaaa
aaaaaaaaa aaaacaaaaa acctttacgt aacgttttgc tgggagagaa gactacgaag
                                                                      1800
cacattttcc aggaagtgtg ggctgcaacg attgtgcgct cttaactaat cctgagtaag
                                                                      1860
gtggccactt tgacagtctt ctcatgctgc ctctgccacc ttctctgcca gaagatacca
                                                                      1920
tttcaacttt aacacagcat gatcgaaaca tacaaccaaa cttctccccg atctgcggcc
                                                                      1980
actggactgc ccatcagcat gaaaattttt atgtatttac ttactgtttt tcttatcacc
                                                                      2040
cagatgattg ggtcagcact ttttgctgtg tatcttcata gaaggctgga caaggtaaga
                                                                      2100
tgaaccacaa gcctttatta actaaatttg gggtccttac taattcatag gttggttcta
                                                                      2160
cccaaatgat ggatgatggt agaaaccaaa tagaagaatg gtcttgtggc ataatgtttg
                                                                      2220
ttccctagtc aatgaactct catattcttg tctctggtta ggatcttggg atctggagtc
                                                                      2280
agactgcctg ggctcaaatc ttggctctgc ccataccatc tctgttatcc tggggcaagt
                                                                      2340
gcctcagttt ccacatctga gaaatgggga tggtagtggt gtccatttca tagat
                                                                      2395
<210> 10
```

<sup>&</sup>lt;211> 36

<sup>&</sup>lt;212> DNA

<sup>&</sup>lt;213> Artificial Sequence

<220> <223> primer	
<400> 10 ttatgatacc tcgaggggag agcattcagg aagatg	36
<210> 11 <211> 36 <212> DNA <213> Artificial Sequence	
<220> <223> primer	
<400> 11 tgaatcacga agctttggta tcttctggca gagaag	36
<210> 12 <211> 24 <212> DNA <213> Homo sapiens	
<400> 12 gatgaatttg tcactttcct tgaa	24
<210> 13 <211> 20 <212> DNA <213> Homo sapiens	
<400> 13 gacatttcaa ggcaagaatg	20
<210> 14 <211> 35 <212> DNA <213> Homo sapiens	
<400> 14 acatttcaag gcaagaatga atatatggaa gaaga	35
<210> 15 <211> 37 <212> DNA <213> Homo sapiens	
<400> 15 tacgaagcac attttccagg aagtgtgggc tgcaacg	37
<210> 16 <211> 250 <212> DNA <213> Hepatitis B virus	
<400> 16	
gcacgtcgca tggagaccac cgtgaacgcc caccaaatat tgcccaaggt cttacataag aggactcttg gactctcagc aatgtcaacg accgaccttg aggcatactt caaagactgt ttgtttaaag actgggagga gttggggag gagattaggt taaaggtctt tgtactagga ggctgtaggc ataaattggt ctgcgcacca gcaccatgca actttttcac ctctgcctaa tcatctcttg	60 120 180 240 250

<210> 17 <211> 12 <212> DNA <213> Hepatitis B virus	
<400> 17 gactgtttgt tt	12
<210> 18 <211> 12 <212> DNA <213> Hepatitis B virus	
<400> 18 aggactettg ga	12
<210> 19 <211> 15 <212> DNA <213> Hepatitis B virus	
<400> 19 tacttcaaag actgt	15
<210> 20 <211> 23 <212> DNA <213> Hepatitis B virus	
<400> 20 tacttcaaag actgtttgtt taa	23
<210> 21 <211> 15 <212> DNA <213> Hepatitis B virus	
<400> 21 ggctgtaggc ataaa	15
<210> 22 <211> 156 <212> DNA <213> Hepatitis B virus	
<400> 22 ttattatcca gaacatctag ttaatcatta cttccaaact agacactatt tacacactct atggaaggcg ggtatattat ataagagaga aacaacacat agcgcctcat tttgtgggtc accatattct tgggaacaag atctacagca tggggc	60 120 156
<210> 23 <211> 15 <212> DNA <213> Hepatitis B virus	
<400> 23 ctagttaatc attac	15
<210> 24 <211> 15 <212> DNA <213> Hepatitis B virus	

<400> 24 ttatataaga gagaa	15
<210> 25 <211> 306 <212> DNA <213> Hepatitis B virus	
<pre>&lt;400&gt; 25 ctaagcaggc tttcactttc tcgccaactt acaaggcctt tctgtgtaaa caatacctga acctttaccc cgttgcccgg caacggccag gtctgtgcca agtgtttgct gacgcaaccc ccactggctg gggcttggtc atgggccatc agcgcatgcg tggaaccttt tcggctcctc tgccgatcca tactgcggaa ctcctagccg cttgttttgc tcgcagcagg tctggagcaa acattatcgg gactgataac tctgttgtcc tatcccgcaa atatacatcg tttccatggc tgctag</pre>	60 120 180 240 300 306
<210> 26 <211> 21 <212> DNA <213> Hepatitis B virus	
<400> 26 tgtaaacaat acctgaacct t	21
<210> 27 <211> 21 <212> DNA <213> Hepatitis B virus	
<400> 27 taccccgttg cccggcaacg g	21
<210> 28 <211> 21 <212> DNA <213> Hepatitis B virus	
<400> 28 gctgacgcaa cccccactgg c	21
<210> 29 <211> 32 <212> DNA <213> Artificial Sequence	
<220> <223> primer	
<400> 29 caccgaagct taagcaggct ttcactttct cg	32
<210> 30 <211> 26 <212> DNA <213> Artificial Sequence	
<220> <223> primer	
<400> 30 cagtaccgga atgccaagct tcgatg	26

<210> 31 <211> 214 <212> DNA <213> Vancomycin resistant enterococcus	
<pre>&lt;400&gt; 31 gagatgtata taattttta ggaaaatctc aaggttatct ttactttttc ttaggaaatt aacaatttaa tattaagaaa cggctcgttc ttacacggta gacttaatac cgtaagaacg agccgttttc gttcttcaga gaaagatttg acaagattac cattggcatc cccgttttat ttggtgcctt tcacagaaag ggttggtctt aatt</pre>	60 120 <b>1</b> 80 214
<210> 32 <211> 10 <212> DNA <213> Vancomycin resistant enterococcus	
<400> 32 ttaggaaatt	10
<210> 33 <211> 10 <212> DNA <213> Vancomycin resistant enterococcus	
<400> 33 tattaagaaa	10
<210> 34 <211> 10 <212> DNA <213> Vancomycin resistant enterococcus	
<400> 34 cgtaagaacg	10
<210> 35 <211> 6905 <212> DNA <213> Artificial Sequence	
<220> <223> promoter	
<pre>&lt;400&gt; 35 tctagaaaat aattcccaat attgaatccc aaagaattca acatttgggc tgtcgtttga aagataagtt gaatttggtc atgaaggaag agagggggga tacaatttca gtaaaaggta acagcaaggt ccaaaggacag tcaggtcttc agtagtatgg aggaagaggt gtgagaagag gctgtaaaga aaaattgaaa cttgattgga atggactta aaggctaggc tatggagact ggacatgaat ctgcaggcca gtgtttgcag actggcgcc ataactgtct atcacagcaa cacagacatg tgttgtttgg cctgcagagg tttggccgc atgatgatt taaaccaact gaattagtag ccatcattt caaaaatcaa gagatgccac attaaaatat ggaatgctgc tgttcttgaa aataatgaaa catctggaac attgaggcca cattcctgac cagttggagc tgcgtagtag ctgccactt tacatgggcc cattcctgac cagttggagc cacttccctt tatctctca ataccaagct cttttcactc cttaagagat atttgggttt gaaacctctg atgaggtaa ttgagggtta tagagcagag gacagatgct atcagagttg tctttaaga aagaaccctc tgttcttcat atagagatgat atcagagttg tctttaaga aagaaccctc tgttcttcat atagagaagagagagagagagagagagagagagagag</pre>	60 120 180 240 300 420 480 540 600 720 780
ataagcatct atgcaaagga aatagcagat gtcctcaaat cagcagaggc aacaactctg aaagtttatt cataagcccc tettttcate tecaatccag ttcaaatgta attatttaaa	960 1020

ttgttcttca ctctccttcc tggatcatga atgagctcct taaatgcagg gtccacagtg 1080 toctattcat cagtgaattc caagtgoota goacagagoo tggcaaatag taaatgotta 1140 acaaatattc gttcagtgca tgaattggag tgattctcta ctttgcctca taagttgaaa 1200 1260 aaaggtttat tacataccta aatatgctga aatcacaggg catttggcaa ccccccaaaa ccaaaactcc cagtttggaa acagaatttt aattctgtga aaataaaatc cattcattta 1320 1380 ttcaaaaaat atttattaaa caatgaccat gtccacacca ggctgagtcc taaggattca 1440 atgatgaaca aaaaccaaca tgattcctgc tcttaggaaa catacagttc agtgaggaaa 1500 acagattgtg agaagtcctc caacaaatac tgggtgctat taaaaatatat taaaaggtga 1560 gtgggtgagg gacttgagct agcctaggtg gttcaggaag tetteetgga tgtgetgata 1620 tgcataggca ttaactagat aaatagagag aaggatgaac caacattgca ggtagaggga acagaatatg caaaggcagg aaggattatg gagtcgttgg aggacctgaa taaaggccca 1680 1740 gtgtaagtgg atctcagaaa acaggaggaa aggtgtatga gatgagatca gagaggcaga tcatgtgggg tatggttaat gttttggact tttctattaa gagcaatggg gagacagtga 1800 1860 caggacttaa acggggaaat aatatgacca gattaaactt tctaaaaaac cctctatgca 1920 aatatatatt gagagttaat tattgacaaa gattcaaagg caacaaagtg gagagagaat agtattttca aaaaatggtg ccaaaacaat aggacatcta tattaaaagt tgggtatctg 1980 tctacaaaac ttaattcaaa atggatcaca gacctaaatg taaaactgaa agctatacaa 2040 cttctggaag gaaaacacag atgggaatct gtgtgatctt gagtttgaaa atgatttatt 2100 atatctgaca ccataatccg taagttaaca taattcataa gtgaacaaag tgatgaactg 2160 gacttcatca gaatttaaaa tgtttgtgct tcaaaagaca ctggtatgat aatgaagaca 2220 aactacagat aagatattgt tgaatcatat ttctgataaa ggaattgtgg ctcagaatac 2280 ataactctaa acccccataa taaattacaa gtagcccaat taaaaaaaaa aaaagagaaa 2340 2400 aaatttacag tottoatcaa agaaagtato aattgtaaaa taagcacatg aaaaatgoto 2460 tgcatcttta ttcatggggg gatgaaataa aaattaaatg ggaaagacac ctctaattag aatactaaaa ttaaaaagac tgaccatacc aagtattggt gaagtggaaa tgtaaaatga 2520 2580 tacaatcaac ttaggtagat gatttggaag tttcttacaa aagtaggtgt atacctaccc 2640 tgtgactcac ccattccatg gctaagtatt tacctgagag aaatgaaaga atacatccat 2700 acaaagatgt ttatacaaat atttatagca gttttatttg tagtagcccc aaactgaaaa 2760 gaacccaaat gtccatcaaa agtgaatgga taaacaaagc gtggtacagc aatgcaatag 2820 aatactactt agcaataaag aagaatgagc tagtgatata cataacagct taaatgtaca tcaaaggcat tgtgctcagt gaaagatgca agtaaaaaaa aaaaagagta catgctgtat 2880 agttccattg acataaaact ctggaaagtg aaaaacagtc tatactgaca gaaagcagat 2940 3000 cattggttgc ctgaggagga ggagtatagg agaggtggag ggaaaatgta caaagtggca caataaaaac ttttggaatc atagatatat tcactatctt gattgagtga tgatttcatg 3060 3120 agtgcacgtg cgtgtgtcaa aaatgatcaa tttatgcaac tttaaaatatg tgcagtttat 3180 tqtatatatc aattatacct cagtacggct attaaaaaga aaccctctgg ctgcacaatg cagaactgat tctaggaaag agtggaggga ggatgaccat ttacagtgct ccaggtggaa 3240 3300 qagaacggtg ccttctggaa gtgaactagg ttggcaacaa cagagatgaa ataaatgggc 3360 agatgtgtga gatacttagg aaataaaacc cgatggtcac cattttccaa aggtcagctc 3420 atcctggctt tccagagcaa agagctaggg aagactttat taataaatcc ctcttgaagt 3480 tgcagaggaa gcttatagca gaaacttact ctcaacctga ctaatctgag agaacacctc tggttccatt tgattactaa aaaactgcaa agaacaggag gagaaagaag aagaaagctg 3540 3600 gtacaaacag tgaacttata taatattaat caataattgt ctcttgttct taaaagcaat gggaagaaaa tgagatttga gctggaagat cagagttcaa aatccaaata aagtatatgg 3660 ccctaatatg cttatagtag ttaacctttc ctgataatga tataattgtt gacagcacca 3720 3780 tctttaaaat aaaataacat agtaatcctt cagatttgta gaagatcttt cctgtttaca 3840 agtttgttct atacacatta tgtcttttaa atgacacact agccttctga gggtaactta tattggcaac agttttcaga tgtggaaact gtgaagacaa tgttggtgat gtggaagcaa 3900 3960 cataaacttt ggagtctttc agacccaggt ttgaatgtca gactgctttt tattcagagt aacttcagag cattatttct caccttaatt ttttttcagg cctctttgtg tctatgtgtc 4020 ctcttcactc ctgtccattg tttcttcagt gatttttgcc accttccttc actgttagtg 4080 4140 tgtagacaca tagttctcct ggctctgaga gcctatgtta attccattct accatcctgc cacggcccac tcaattccta ttgagcaatg ctagttgaaa gttgtggtgg gattaaatgt 4200 tgcaatgagt attcaaatga ggttgaagta tctacgcatt ctacttacat atggtgaggt 4260 4320 atattcaagg aagctgtagc cattaaaatc tcaggaaata atttttcacc tcctcaggtg aaagggtctt caggcctttg tgttctggaa ggttcattta tagccatttc ccaaatgaca 4380 4440 atgcgattga tgagtctaga gtctagctca aatagcaatg gactggaaga ctagtttagg ttttactaat gtggaacata gaacaaatta tgtccttgtt tcagcctgtt catctgtgaa 4500 atagageeta teatateeag tetteettge etttaggttt gagttaeett etttggteaa 4560 ggtaagtaaa tgcctatgat gtttggctgt gcacaagata aagctacaac aaagctacaa 4620 cccatctttt ctctgtagaa gactcaaaaa gcaaaagaga cccaggaaaa tctcggaatg 4680 acttttggaa cagagagcct ccccagaatc agaagtcaag gaatttaaac atagggaagg 4740

```
cccaqqtctc tactqacata aaqqaaaqat qttttcttat agqtttcacq tttacatttt
                                                                      4800
ctctctcttg atcccattcc cacttgcatc tgccaccttt acacagggct tatgggacct
                                                                     4860
                                                                      4920
cctccacaaa agagcagttg cagtaaccca catcatcctc tacgccctgg ctgtccatca
                                                                      4980
agaqqcqaaa agcaqcccta tataggttct atccttggat agttccagtt gtaaagttta
                                                                     5040
aaatatqcqa aggcaacttq gaaaagcaag cqqctqcata caaagcaaac gtttacagag
ctctqqacaa aattqaqcqc ctatqtqtac atqqcaaqtq tttttaqtqt ttqtqtqttt
                                                                      5100
acctgcttgt ctgggtgatt ttgcctttga gagtctggag agtagaagta ctggttaaag
                                                                      5160
qaacttccaq acaggaagaa ggcaqaqaaq agggtagaaa tgactctgat tcttggggct
                                                                      5220
qaqqqttcct aqaqcaaatq qcacaatqcc acqaqqcccq atctatccct atgacqqaat
                                                                      5280
ctaaqqtttc aqcaaqtatc tqctqqcttq qtcatqqctt qctcctcaqt ttqtaqqaqa
                                                                      5340
ctctcccact ctcccatctq cqcqctctta tcaqtcctqa aaaqaacccc tgqcaqccag
                                                                      5400
qaqcaqqtat tectateqte etttteetee eteceteqee ecaecetqtt ggttttttag
                                                                      5460
                                                                     5520
attqqqcttt qqaaccaaat ttcctqaqtq ctqqcctcca qqaaatctqq aqccctqqcg
cctaaacctt ggtttaggaa accaggagct attcaggaag caggggtcct ccagggctag
                                                                      5580
agctagecte teetgeeete geecaegetq egecageaet tgttteteea aagceaetag
                                                                      5640
qcaqqcqtta qcqcqcqqtq aqqqqqqqq aqaaaaqqaa aqqqqagqgq agggaaaagg
                                                                      5700
aggtqqqaaq qcaaqqaqqc cqqcccqqtq qqqqcqqqac ccqactcqca aactgttqca
                                                                     5760
tttgctctcc acctcccagc gcccctccq agatcccqqq gaqccaqctt qctgggagag
                                                                      5820
cgggacggtc cggagcaagc ccacaggcag aggaggcgac agagggaaaa agggccgagc
                                                                      5880
tagccgctcc agtgctgtac aggagccgaa gggacgcacc acgccagccc cagcccggct
                                                                     5940
ccagcgacag ccaacgcctc ttgcagcgcg gcggcttcga agccgccgcc cggagctgcc
                                                                      6000
ctttcctctt cggtgaagtt tttaaaagct gctaaagact cggaggaagc aaggaaagtg
                                                                      6060
cctggtagga ctgacggctg cctttqtcct cctcctccc accccgcctc ccccaccct
                                                                      6120
qccttccccc cctccccqt cttctctccc qcaqctqcct caqtcqqcta ctctcaqcca
                                                                     6180
accecetea ecaceettet ecceaecege ecceeegee ecqtequeea qeqetqeeag
                                                                     6240
cccqaqtttq caqaqaqta actccctttq qctqcqaqcq qgcqaqctaq ctqcacattq
                                                                     6300
caaagaaggc tettaggage caggegactg gggagegget teageactge agecacgaee
                                                                     6360
cqcctqqtta qqctqcacqc qqaqaqaacc ctctqttttc ccccactctc tctccacctc
                                                                     6420
ctcctgcctt ccccacccg agtgcggagc cagagatcaa aagatgaaaa ggcagtcagg
                                                                     6480
                                                                     6540
tcttcagtag ccaaaaaaca aaacaaacaa aaacaaaaaa caagaaataa aagaaaaaga
                                                                     6600
taataactca gttcttattt gcacctactt cagtggacac tgaatttgga aggtggagga
ttttgttttt ttcttttaag atctgggcat cttttgaatc tacccttcaa gtattaagag
                                                                     6660
acagactgtg agcctagcag ggcagatctt gtccaccgtg tgtcttcttc tgcacgagac
                                                                     6720
tttgaggetg teagageget ttttgegtgg ttgeteeege aagttteett etetggaget
                                                                     6780
tcccgcaggt gggcagctag ctgcagcgac taccgcatca tcacagcctg ttgaactctt
                                                                     6840
ctgagcaaga gaaggggagg cggggtaagg gaagtaggtg gaagattcag ccaagctcaa
                                                                     6900
                                                                      6905
ggatg
<210> 36
<211> 43
<212> DNA
<213> Artificial Sequence
<220>
<223> primer
<400> 36
cacqcqtqqt acctctagaa aataattccc aatattgaat ccc
                                                                       43
<210> 37
<211> 30
<212> DNA
<213> Artificial Sequence
<220>
<223> primer
<400> 37
agctggctcc ccgggatctc ggaggggcgc
                                                                       30
<210> 38
<211> 42
```

<212> DNA <213> Artificial Sequence	
<220> <223> primer	
<400> 38 cacgcgtggt accagacagt gacaggactt aaacggggaa at	42
<210> 39 <211> 16 <212> DNA <213> Artificial Sequence	
<220> <223> primer	
<400> 39 agctggctcc ccggga	16
<210> 40 <211> 39 <212> DNA <213> Artificial Sequence	
<220> <223> primer	
<400> 40 cacgcgtggt acctatacac attatgtctt ttaaatgac	39
<210> 41 <211> 30 <212> DNA <213> Artificial Sequence	
<220> <223> primer	
<400> 41 agctggctcc ccgggatctc ggaggggcgc	30
<210> 42 <211> 39 <212> DNA <213> Artificial Sequence	
<220> <223> primer	
<400> 42 cacgcgtggt acctatacac attatgtctt ttaaatgac	39
<210> 43 <211> 30 <212> DNA <213> Artificial Sequence	
<220> <223> primer	
<400> 43	

ccgccatggt gagcttggct gaatcttcca	30
<210> 44 <211> 30	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> primer	
<400> 44	
cegggtacet geeetegeee aegetgegee	30
<210> 45	
<211> 30 <212> DNA	
<213> Artificial Sequence	
<220>	
<223> primer	
<400> 45	
agctggctcc ccgggatctc ggaggggcgc	30
<210> 46	
<211> 30	
<212> DNA <213> Artificial Sequence	
<220> <223> primer	
<400> 46	
ccgggtacct gccctcgccc acgctgcgcc	30
<210> 47	
<211> 30	
<212> DNA	
<213> Artificial Sequence	
<220> <223> primer	
V2237 primer	
<400> 47 agctggctcc ccgggatctc ggagggcgc	30
	50
<210> 48 <211> 54	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> primer	
<400> 48	
cagaacattt ctctatcgat aggtaccgag caggtattcc tatcgtcctt ttcc	54
<210> 49	
<211> 54 <212> DNA	
<213> Artificial Sequence	

<220> <223> primer	
<400> 49 ggaaaaggac gataggaata cctgctcggt acctatcgat agagaaatgt tctg	54
<210> 50 <211> 54 <212> DNA <213> Artificial Sequence	
<220> <223> primer	
<400> 50 cagaacattt ctctatcgat aggtaccaaa tctggagccc tggcgcctaa acct	54
<210> 51 <211> 54 <212> DNA <213> Artificial Sequence	
<220> <223> primer	
<400> 51 aggtttaggc gccagggctc cagatttggt acctatcgat agagaaatgt tctg	54
<210> 52 <211> 51 <212> DNA <213> Artificial Sequence	
<220> <223> primer	
<400> 52 cagaacattt ctctatcgat aggtaccggc gttagcgcgc ggtgagggga g	51
<210> 53 <211> 51 <212> DNA <213> Artificial Sequence	
<220> <223> primer	
<400> 53 tctccctcac cgcgcgctaa cgccggtacc tatcgataga gaaatgttct g	51
<210> 54 <211> 57 <212> DNA <213> Artificial Sequence	
<220> <223> primer	
<400> 54 cagaacattt ctctatcgat aggtaccggg aaaaggaggt gggaaggcaa ggaggcc	57
<210> 55	

<211> 57 <212> DNA <213> Artificial Sequence	
<220> <223> primer	
<400> 55 ggcctccttg ccttcccacc tccttttccc ggtacctatc gatagagaaa tgttctg	57
<210> 56 <211> 60 <212> DNA <213> Artificial Sequence	
<220> <223> primer	
<400> 56 cagaacattt ctctatcgat aggtaccctc gcaaactgtt gcatttgctc tccacctccc	60
<210> 57 <211> 60 <212> DNA <213> Artificial Sequence	
<220> <223> primer	
<400> 57 gggaggtgga gagcaaatgc aacagtttgc gagggtacct atcgatagag aaatgttctg	60
<210> 58 <211> 65 <212> DNA <213> Artificial Sequence	
<220> <223> primer	
<400> 58 ccagtgctgt acaggagccg aagggacgca ccccatggaa gacgccaaaa acataaagaa aggcc	60 65
<210> 59 <211> 63 <212> DNA <213> Artificial Sequence	
<220> <223> primer	
<400> 59 cctttcttta tgtttttggc gtcttccatg gggtgcgtcc cttcggctcc tgtacagcac tgg	60 63
<210> 60 <211> 59 <212> DNA <213> Artificial Sequence	
<220>	

<223> primer	
<400> 60 ccacaggcag aggaggcgac agagggccat ggaagacgcc aaaaacataa agaaaggcc	59
<210> 61 <211> 57 <212> DNA <213> Artificial Sequence	
<220> <223> primer	
<400> 61 cctttcttta tgtttttggc gtcttccatg gccctctgtc gcctcctctg cctgtgg	57
<210> 62 <211> 63 <212> DNA <213> Artificial Sequence	
<220> <223> primer	
<400> 62 gggagagcgg gacggtccgg agcaagccca ccatggaaga cgccaaaaac ataaagaaag gcc	60 63
<210> 63 <211> 63 <212> DNA <213> Artificial Sequence	
<220> <223> primer	
<400> 63 ggcctttctt tatgtttttg gcgtcttcca tggtgggctt gctccggacc gtcccgctct ccc	60 63
<210> 64 <211> 17 <212> DNA <213> Homo sapiens	
<400> 64 tgttgcattt gctctcc	17
<210> 65 <211> 16 <212> DNA <213> Homo sapiens	
<400> 65 gctctccacc tcccag	16
<210> 66 <211> 25 <212> DNA <213> Homo sapiens	
<400> 66	

```
25
ggtgaggga ggggagaaaa ggaaa
<210> 67
<211> 2167
<212> DNA
<213> Homo sapiens
<400> 67
caggccccac aaaacctaga tctgccccag tataactaaa tctgggacca tttattgagc
                                                                        60
aattattatg tgccaagtat tgcgctgagt gcttccagag cattatctcc tttaacccca
                                                                       120
gcatagtatg tcagatgctg ttttacagat gagccaactg agaccagaga tgctcagtca
                                                                       180
                                                                       240
cttgcccaag gtgacatgac tgatatggaa tagagtcaag atttttttt tttttttga
                                                                       300
cacqqaqtct cactctgtct cccaggctgg agtgcagagg cgcaatctca gctcactgca
agetetgeet eccaggitea egeattetee tgeeteagee teetgagiag etgggaetae
                                                                       360
                                                                       420
aggcacccgc caccacact ggctaatttt ttgtattttt agcagagaca gggtttcacc
gtgttagcca ggatggtctc gatctcctga cctcgtgatc tgcctgcctc ggcctcccaa
                                                                       480
                                                                       540
agtgatggaa ttacaggtgt gagccaccgc gactggccag attcaagatt tgaacccagg
teetettggt eccagaggee cetgtttete aacteeetag catgeataeg cacetgteee
                                                                       600
tctagaggtg cctgcttaag tgtgctcagc acatggaagc aagttagaaa tgctaggtat
                                                                       660
acctgtaaag aggtgtggga gatggggggg agggaagaga gaaagagatg ctggtgtcct
                                                                       720
                                                                       780
tcattctcca gtccctgata ggtgcctttg atcccttctt gaccagtata gctgcattct
                                                                       840
tggctggggc attccaacta gaactgccaa atttagcaca taaaaataag gaggcccagt
                                                                       900
taaatttgaa tttcagataa acaatgaata atttgttagt ataaatatgt cccatgcaat
                                                                       960
atcttgttga aattaaaaaa aaaaaaaaaa gtcttccttc catccccacc cctaccacta
                                                                      1020
ggcctaagga atagggtcag gggctccaaa tagaatgtgg ttgagaagtg gaattaagca
                                                                      1080
ggctaataga aggcaagggg caaagaagaa accttgaatg cattgggtgc tgggtgcctc
cttaaataag caagaagggt gcattttgaa gaattgagat agaagtcttt ttgggctggg
                                                                      1140
                                                                      1200
tgcagttgct cgtqqttgta attccagcac tttgggaggc tgaggcggga ggatcacctg
                                                                      1260
agettqqqaq ttcaagacca geetcaecaa egtggagaaa eeetgtettt actaaaaata
                                                                      1320
caaaaaattc agctggtcat ggtggcacat gcctgtaatc ccagctgctc gggaggctga
                                                                      1380
qqcaqqaqaa tcacttgaac cagggaggca gaggttgtgg tgagcagaga tcgcgccatt
                                                                      1440
gctctccagc ctgggcaaca agagcaaaag ttcgtttaaa aaaaaaaaa agtcctttcg
                                                                      1500
atqtqactqt ctcctcccaa atttgtagac cctcttaaga tcatgctttt cagatacttc
                                                                      1560
aaaqattcca qaaqatatqc cccqqqqqtc ctggaagcca caaggtaaac acaacacatc
                                                                      1620
cccctccttq actatcaatt ttactagagg atgtggtggg aaaaccatta tttgatatta
                                                                      1680
aaacaataqq cttqqqatqq agtaggatgc aagctcccca ggaagttaga taactgagac
                                                                      1740
ttaaaqqqtq ttaaqaqtqq caqcctaggg aaatttatcc cggactccgg gggagggggc
                                                                      1800
agagtcacca gcctctgcat ttagggattc tccgaggaaa agtgtgagaa cggctgcagg
                                                                      1860
caacccagge qtcccqqcqc taggaggac qacccaggcc tgcgcgaaga gagggagaaa
                                                                      1920
gtgaagetgg gagttgeega eteceagaet tegttggaat geagttggag ggggegaget
                                                                      1980
qqqaqcqcqc ttqctcccaa tcaccqqaqa aqqaqqaqgt qgaggaggag ggctgcttga
                                                                      2040
ggaagtataa gaatgaagtt gtgaagctga gattcccctc cattgggacc ggagaaacca
                                                                      2100
ggggagcccc ccgggcagcc gcgcgcccct tcccacgggg ccctttactg cgccgcgcgc
                                                                      2160
coggececa ecetogeag caeceogege ecegegeet eceageoggg tecageogga
                                                                      2167
gccatgg
<210> 68
<211> 32
<212> DNA
<213> Artificial Sequence
<220>
<223> primer
<400> 68
                                                                        32
gcacgcgtaa gcttcaggcc ccacaaaacc ta
<210> 69
<211> 35
<212> DNA
```

<213> Artificial Sequence

<220> <223> primer	
<400> 69 cgctcgagcc atggctccgg ctggacccgg ctggg	35
<210> 70 <211> 10 <212> DNA <213> Homo sapiens	
<400> 70 gaatgaagtt	10
<210> 71 <211> 15 <212> DNA <213> Homo sapiens	
<400> 71 cgcttgctcc caatc	15
<210> 72 <211> 13 <212> DNA <213> Homo sapiens	
<400> 72 gaggaaggta taa	13
<210> 73 <211> 135 <212> DNA <213> Escherichia coli	
<400> 73 gacgtcaggt ggcacttttc ggggaaatgt gcgcggaacc cctatttgtt tattttcta atacattcaa atatgtatcc gctcatgaga caataaccct gataaatgct tcaataatat tgaaaaagga agagt	60 120 135
<210> 74 <211> 136 <212> DNA <213> Escherichia coli	
<400> 74 gacgtcaggt ggcacttttc ggggaaatgt gcgcggaacc cctatctgtt tgttcttcta gacacattca cacatgtatc cgctcatgag acaataaccc tgataaatgc ttcaatgaca ttgagaaagg aagagt	60 120 136
<210> 75 <211> 12 <212> DNA <213> Escherichia coli	
<400> 75 aatacattca aa	12
<210> 76 <211> 12 <212> DNA <213> Escherichia coli	

<400> 76	1.0
catgagacaa ta	12
<210> 77	
<211> 12	
<212> DNA	
<213> Escherichia coli	
<400> 77	1.0
accetgataa at	12
<210> 78	
<211> 12	
<212> DNA	
<213> Escherichia coli	
<400> 78	12
ttgaaaaagg aa	12